

REMARKS/ARGUMENTS

Claims 1-3 and 5-8 are pending herein. Claims 5-7 have been withdrawn from consideration by the PTO. Claim 1 has been amended as supported by Figs. 3 and 4 and the specification at paragraph [0003], [0030]-[0031], for example. Applicants respectfully submit that no new matter has been added.

Examiner Turocy is thanked for the courtesies extended to Applicants' undersigned representative during the telephonic interview on March 5, 2008. Examiner Turocy confirmed during the interview that an RCE would be necessary to enter the claim amendments outlined above.

Even after entry of the Amendment filed January 29, 2008, Examiner Turocy maintained the rejection of claims 1-4 under §103(a) over Yara, and the rejection of claims 1-4 and 8 under §103(a) over Yara in view of Mizuno. To the extent that these rejections may be applied against the amended claims, they are respectfully traversed.

Amended claim 1 recites a method of producing a thin film using opposing electrodes, the method including a step of applying a pulse voltage on the opposing electrodes under a pressure of 100 to 1600 Torr in atmosphere comprising gaseous raw material including a carbon source to generate a discharge plasma to form a thin film of diamond-like carbon on a substrate. The pulse voltage has a pulse duration of shorter than 1000 ns. Amended claim 1 now recites that the diamond-like carbon has a Raman spectrum comprising a main peak at about a wave number of 1580 cm⁻¹ and a shoulder peak in a wave number range of 1300 cm⁻¹ to 1500 cm⁻¹.

Yara discloses producing thin carbon films at low temperature by creating a plasma by setting a solid dielectric along an opposing plane of counter electrodes and applying a pulse electric field between electrodes in an atmosphere containing carbon and oxygen and/or hydrogen under a pressure near atmospheric pressure. Mizuno characterizes using ultra short pulse discharge plasma for CBD processing.

Amended claim 1 is distinguishable from the cited references because the method disclosed by Yara produces a diamond-like carbon (DLC) thin film that has a Raman spectrum main peak at about 1332 cm⁻¹ (see Yara paragraph [0049]). In contrast, the DLC thin film formed by the method of amended claim 1 has a Raman spectrum including a main peak around a wave number of 1580 cm⁻¹ and a shoulder peak in the range of 1300 cm⁻¹ to 1500 cm⁻¹. Thus, the DLC thin film produced by the method of amended claim 1 has distinctly different physical characteristics from the DLC thin film produced by Yara. Mizuno fails to overcome the deficiencies of Yara.

Based on the above, the cited references fail to teach or suggest each and every element of amended claim 1. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw these rejections.

In closing, Applicants would also like to point out that the pulse duration recited in pending claim 8 is 50% less than the minimum allowable pulse duration disclosed in Yara. How the PTO can argue that claim 8 would have been obvious over Yara in view of Mizuno, when Yara expressly teaches away from pulse durations shorter than 1000 ns, defies logic.

For at least the foregoing reasons, Applicants respectfully submit that all pending claims herein are in condition for allowance. Accordingly, Examiner Turocy is requested to issue a Notice of Allowance for this application in due course.

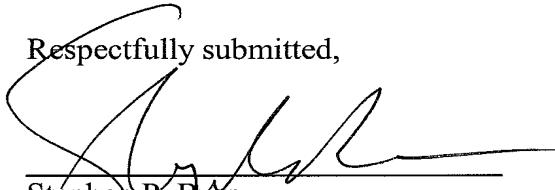
If Examiner Turocy believes that contact with Applicants' attorney would be advantageous toward the disposition of this case, he is herein requested to call Applicants' attorney at the phone number noted below.

The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-1446.

March 5, 2008

Date

Respectfully submitted,


Stephen P. Burr
Reg. No. 32,970

Joseph A. Wilson
Reg. No. 53,780

SPB:JAW:jms

BURR & BROWN
P.O. Box 7068
Syracuse, NY 13261-7068

Customer No.: 025191
Telephone: (315) 233-8300
Facsimile: (315) 233-8320